



# STIC Search Report

EIC 1700

STIC Database Tracking Number: 135777

**TO:** Dawn Garrett  
**Location:** REM 10A54  
**Art Unit :** 1774  
**October 22, 2004**

**Case Serial Number:** 10/644872

**From:** Kathleen Fuller  
**Location:** EIC 1700  
**REMSEN 4B28**  
**Phone:** 571/272-2505  
**Kathleen.Fuller@uspto.gov**

## Search Notes

There were 39 structures from the query. 35 of the structure answers had incomplete iterations which means that the system ran out of time while comparing the structure to the query and just throws the "inc" in with the other good answers. Some times the incompletes are actually good answers but in this case none of them were good. I scanned them all for you. Of the remaining 4 "good" structures there was only one CA reference on utility and it was the applicant. There were 17 other CA references with no utility specified. And I printed those with the structures.

## SEARCH REQUEST FORM

## Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 10/21/04  
 Art Unit: 1774 Phone Number 202-272-1523 Serial Number: 10/644,872  
 Mail Box and Bldg/Room Location: Results Format Preferred (circle): PAPER  
Ramsey 10ASY

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Light Emitting Element

Inventors (please provide full names):

TOSHIHIRO ISE

Earliest Priority Filing Date: 8/22/02 Japan 2002-241662

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search a compound consisting only of carbon, fluorine and silicone in an ~~electrolyte~~ <sup>electroluminescent</sup> device  
 (please note: hydrogen may be present, but only in an amount of 2 hydrogen atoms per six carbon atoms)

See attached claims

thank you

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>K. Fuller</u>	NA Sequence (#)	STN	<u>1</u>
Searcher Phone #:	AA Sequence (#)	Dialog	
Searcher Location:	Structure (#)	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic	Dr.Link	
Date Completed: <u>10/22/04</u>	Litigation	Lexis/Nexis	
Searcher Prep & Review Time: <u>30</u>	Fulltext	Sequence Systems	
Clerical Prep Time:	Patent Family	WWW/Internet	
Online Time: <u>30</u>	Other	Other (specify)	

=> FILE REG  
FILE 'REGISTRY' ENTERED AT 15:44:31 ON 22 OCT 2004  
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STRUCTURE FILE UPDATES: 20 OCT 2004 HIGHEST RN 766487-31-4  
DICTIONARY FILE UPDATES: 20 OCT 2004 HIGHEST RN 766487-31-4

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

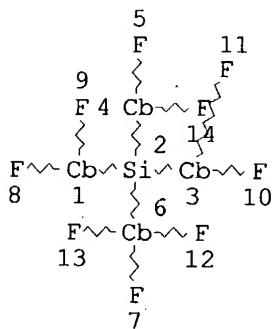
=> FILE HCAPLUS  
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FILE COVERS 1907 - 22 Oct 2004 VOL 141 ISS 17  
FILE LAST UPDATED: 20 Oct 2004 (20041020/ED)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> D QUE  
L48 STR



39 structures from this  
query

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L50                39 SEA FILE=REGISTRY SSS FUL L48  
 L52                51 SEA FILE=HCAPLUS ABB=ON L50  
 L53                1 SEA FILE=HCAPLUS ABB=ON L52 AND (EL OR ?LUMINES? OR LIGHT?(3A)  
 ?EMIT?)            51 CA references

=> D L53 BIB ABS IND HITSTR

L53 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2004:182323 HCAPLUS  
 DN 140:225531  
 TI Light-emitting elements comprising compound consisting  
 essentially of carbon, fluorine and silicon  
 IN Ise, Toshihiro  
 PA Fuji Photo Film Co., Ltd., Japan  
 SO U.S. Pat. Appl. Publ., 13 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004043250 JP 2004103577	A1    A2	20040304    20040402	US 2003-644872 JP 2003-297392	20030821    20030821
PRAI	JP 2002-241662	A	20020822		
OS	MARPAT 140:225531				
AB	Light-emitting elements are described which comprise at least one organic layer which includes a light emitting layer, and which is disposed between a pair of electrodes, where at least one layer of the at least one organic layer contains at least one compound consisting essentially of carbon, fluorine and silicon.				
IC	ICM H05B033-12				
NCL	428690000; 428917000; 313504000; 313506000				
CC	73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)				

only one CA reference on  
utility

and it is  
the applicant

Section cross-reference(s): 22, 76

ST **electroluminescent** device carbon fluorine silicon compd; fluoro aryl silicon OLED

IT Electric heating  
(deposition; **light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon formed by)

IT Electric conductors  
(electron transporting material; **light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon)

IT **Electroluminescent** devices  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon)

IT Coating process  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon formed by)

IT Phosphorescent substances  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon, and)

IT Transition metal complexes  
RL: DEV (Device component use); USES (Uses)  
(phosphorescent material; **light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon, and)

IT Vapor deposition process  
(resistance heating; **light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon formed by)

IT **1524-78-3P**  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon)

IT 363-72-4, Pentafluorobenzene 10026-04-7, Tetrachlorosilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon prepared using)

IT 370878-69-6  
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon, and)

IT 25067-59-8, Poly(N-vinylcarbazole) 65181-78-4, [N,N'-Diphenyl-N,N'-di(m-tolyl)benzidine] 123847-85-8,  $\alpha$ -NPD 148044-07-9 155090-83-8, Baytron P **665048-61-3**  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon, and)

IT 349666-25-7  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**light-emitting** material; **light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon, and)

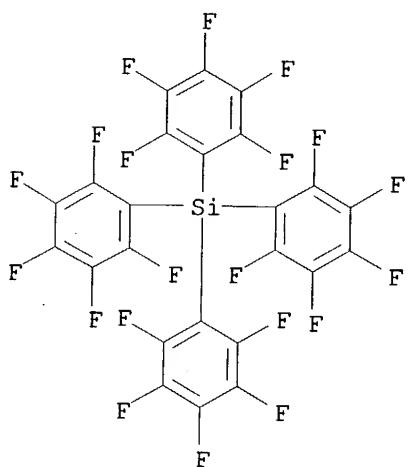
IT 7440-06-4D, Platinum, complex  
RL: DEV (Device component use); USES (Uses)  
(phosphorescent material; **light-emitting** elements comprising compound consisting essentially of carbon, fluorine and silicon, and)

IT 7440-15-5D, Rhenium, complex 7440-18-8D, Ruthenium, complex  
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(phosphorescent material; **light-emitting** elements  
comprising compound consisting essentially of carbon, fluorine and  
silicon, and)

IT 1524-78-3P  
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(**light-emitting** elements comprising compound  
consisting essentially of carbon, fluorine and silicon)

RN 1524-78-3 HCPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



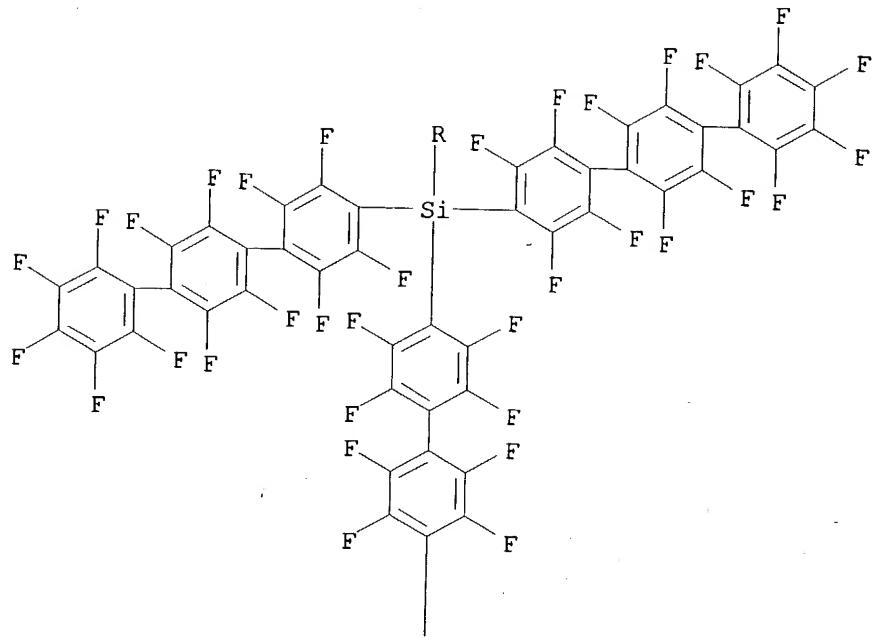
IT 665048-61-3

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(**light-emitting** elements comprising compound  
consisting essentially of carbon, fluorine and silicon, and)

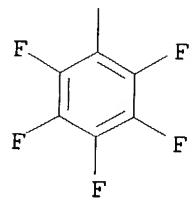
RN 665048-61-3 HCPLUS

CN Silane, tetrakis(2,2',2'',3,3',3'',4'',5,5',5'',6,6',6''-  
tridecafluoro[1,1':4',1''-terphenyl]-4-yl)- (9CI) (CA INDEX NAME)

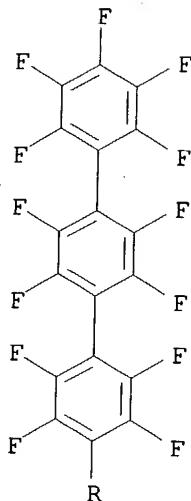
PAGE 1-A



PAGE 2-A



PAGE 3-A



=> => FILE REG

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STRUCTURE FILE UPDATES: 20 OCT 2004 HIGHEST RN 766487-31-4  
DICTIONARY FILE UPDATES: 20 OCT 2004 HIGHEST RN 766487-31-4

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when  
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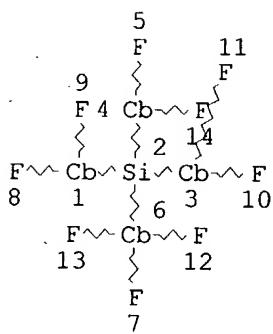
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Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> D QUE

L48

STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED,

NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE

L50 39 SEA FILE=REGISTRY SSS FUL L48

L57 35 SEA FILE=REGISTRY ABB=ON L50/INC

=> D SCAN L57

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN

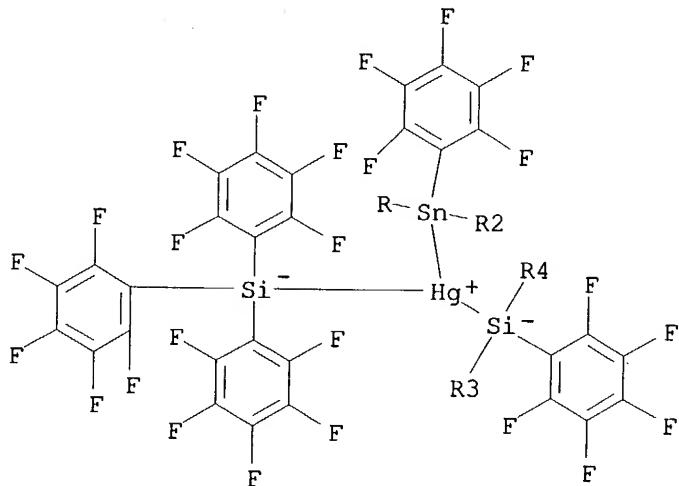
IN Mercurate(1-), bis[tris(pentafluorophenyl)silyl][tris(pentafluorophenyl)stannyl]- (9CI)

MF C54 F45 Hg Si2 Sn

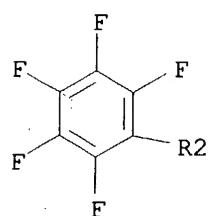
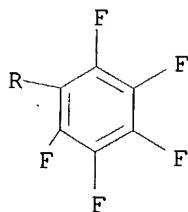
CI CCS, COM

35 of the structures  
Out of the query which  
found 39 structures  
have incomplete  
iterations and  
are not correct  
answers.  
See below ↓

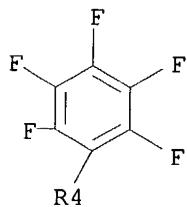
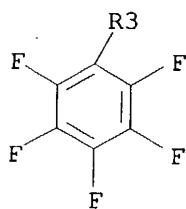
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PAGE 2-A

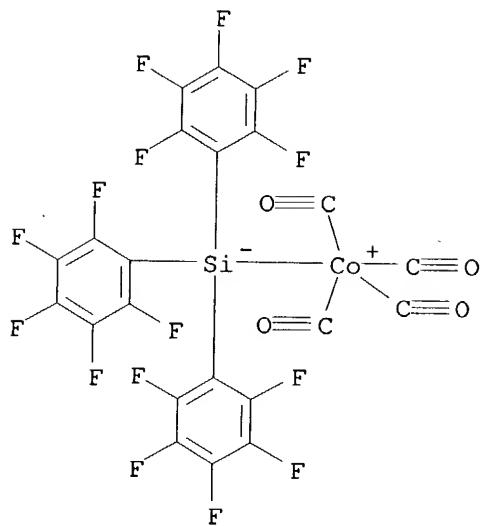


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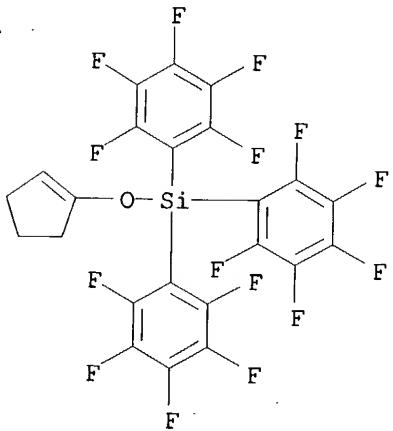


HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):34

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Cobalt, tetracarbonyl[tris(pentafluorophenyl)silyl]- (8CI)  
MF C22 Co F15 O4 Si  
CI CCS

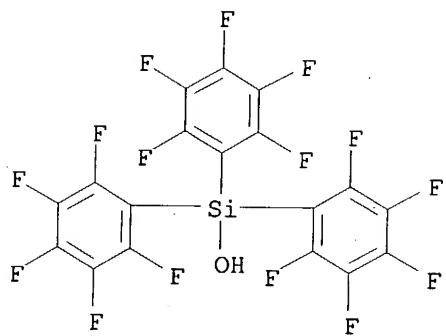


L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, (1-cyclopenten-1-yloxy)tris(pentafluorophenyl)- (9CI)  
MF C23 H7 F15 O Si



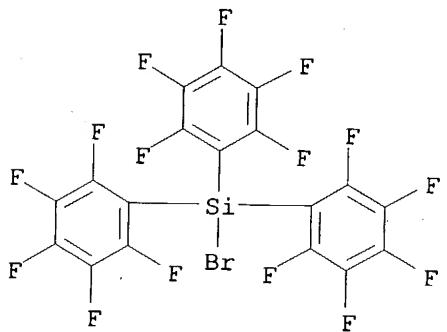
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silanol, tris(pentafluorophenyl)- (9CI)  
MF C18 H F15 O Si



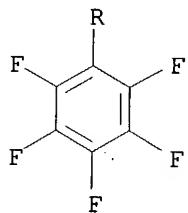
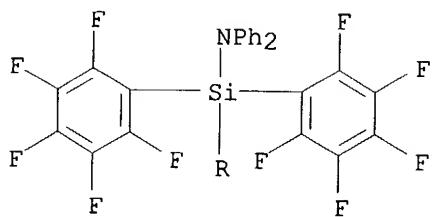
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, bromotris(pentafluorophenyl)- (8CI, 9CI)  
MF C18 Br F15 Si



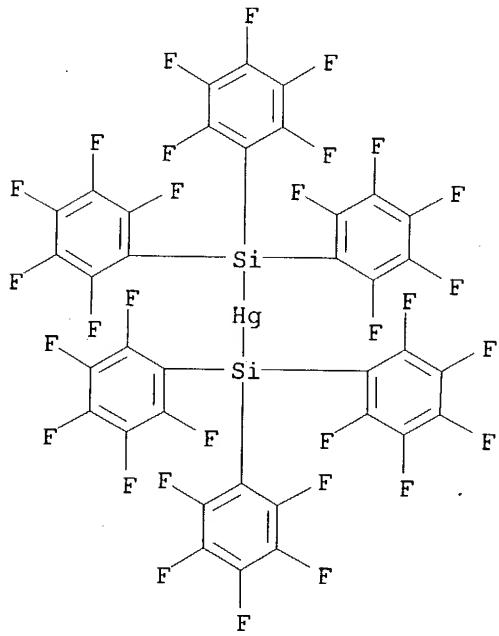
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silanamine, 1,1,1-tris(pentafluorophenyl)-N,N-diphenyl- (9CI)  
MF C30 H10 F15 N Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

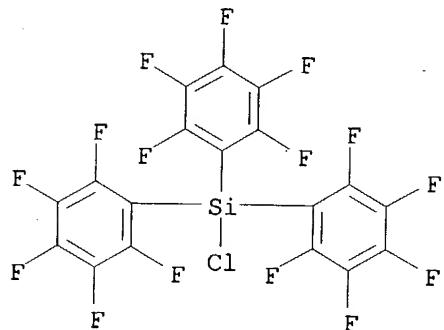
L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Mercury, bis[tris(pentafluorophenyl)silyl]- (9CI)  
MF C36 F30 Hg Si2



L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

IN Silane, chlorotris(pentafluorophenyl)- (8CI, 9CI)  
MF C18 Cl F15 Si



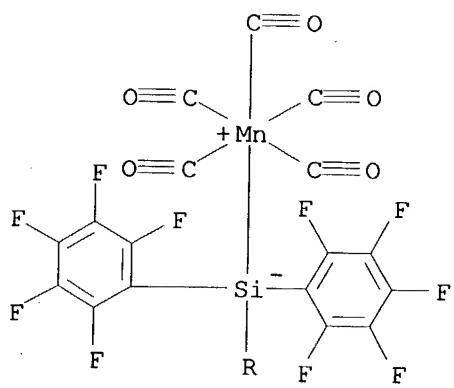
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Mercurate(2-), bis[tris(pentafluorophenyl)silyl]bis[tris(pentafluorophenyl)stannyl]-, (T-4)- (9CI)  
MF C72 F60 Hg Si2 Sn2  
CI CCS, COM

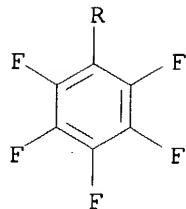
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Manganese, pentacarbonyl[tris(pentafluorophenyl)silyl]-, (OC-6-22)- (9CI)  
MF C23 F15 Mn O5 Si  
CI CCS

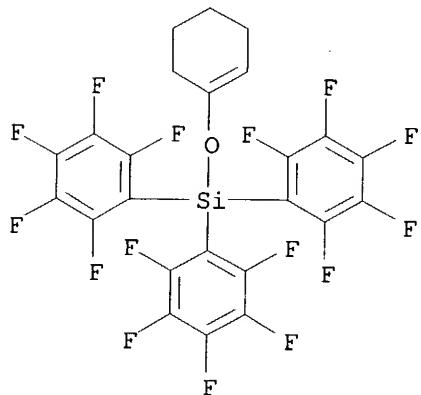
PAGE 1-A



PAGE 2-A



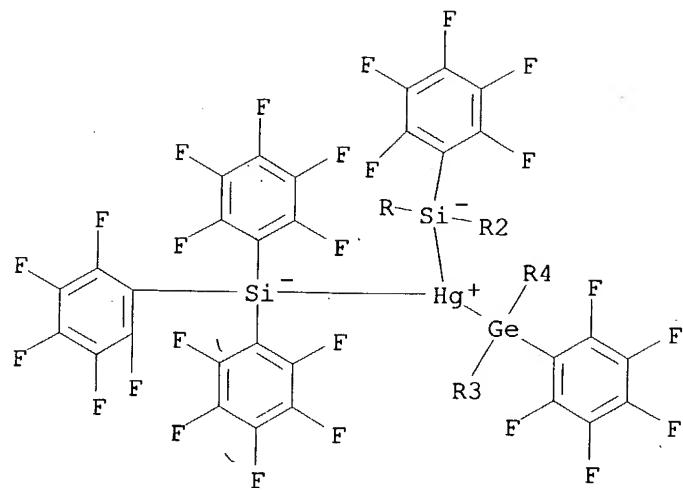
L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, (1-cyclohexen-1-yloxy)tris(pentafluorophenyl)- (9CI)  
MF C24 H9 F15 O Si



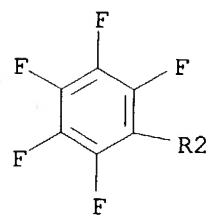
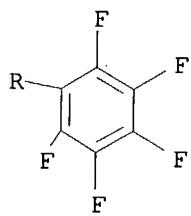
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Mercurate(1-), [tris(pentafluorophenyl)germyl]bis[tris(pentafluorophenyl)silyl]- (9CI)  
MF C54 F45 Ge Hg Si2  
CI CCS, COM

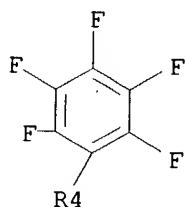
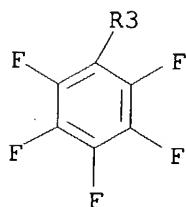
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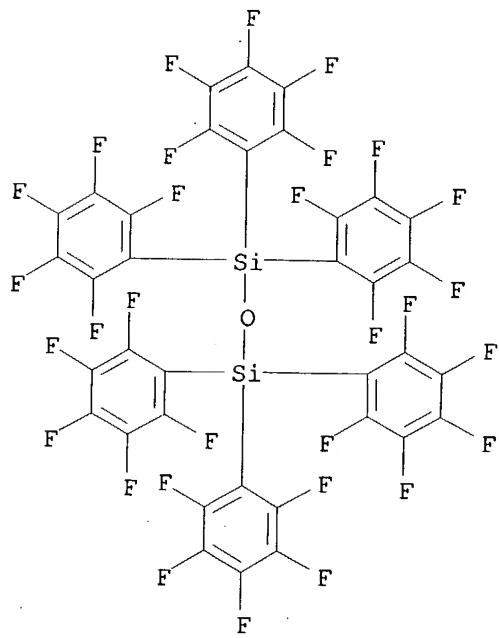
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PAGE 3-A

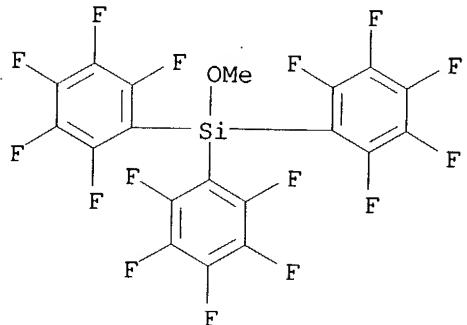


L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Disiloxane, hexakis(pentafluorophenyl)- (8CI, 9CI)  
MF C36 F30 O Si2



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

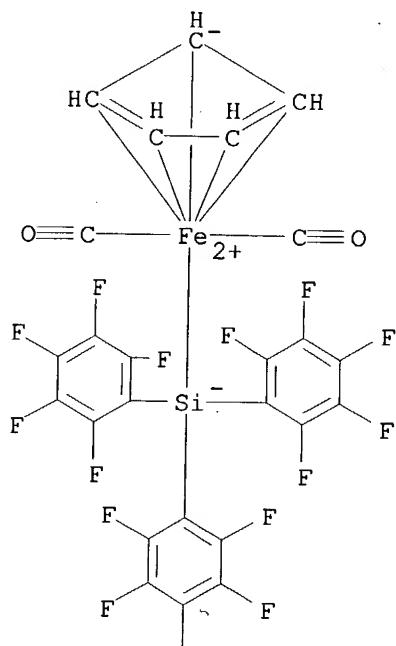
L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, methoxytris(pentafluorophenyl)- (9CI)  
MF C19 H3 F15 O Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Iron, dicarbonyl( $\eta^5$ -2,4-cyclopentadien-1-yl)[tris(pentafluorophenyl)si-  
lyl]- (9CI)  
MF C25 H5 F15 Fe O2 Si  
CI CCS

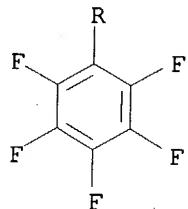
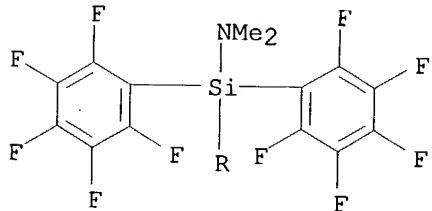
PAGE 1-A



PAGE 2-A

|  
F

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silylamine, N,N-dimethyl-1,1,1-tris(pentafluorophenyl)- (8CI)  
MF C20 H6 F15 N Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

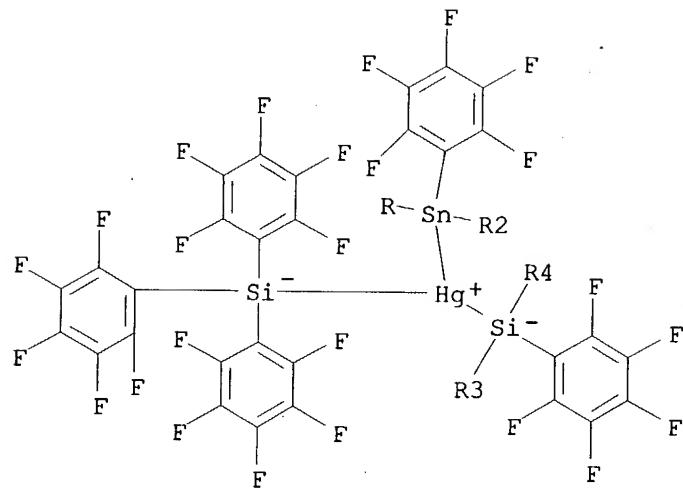
L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Praseodymium(3+), tris(1,2-dimethoxyethane-O,O')-, (OC-6-11)-,  
(T-4)-bis[tris(pentafluorophenyl)silyl]bis[tris(pentafluorophenyl)stannylyl]  
mercurate(2-) bis[tris(pentafluorophenyl)silyl][tris(pentafluorophenyl)sta  
nnyl]mercurate(1-) (1:1:1) (9CI)  
MF C72 F60 Hg Si2 Sn2 . C54 F45 Hg Si2 Sn . C12 H30 O6 Pr

CM 1

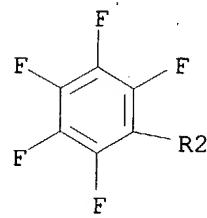
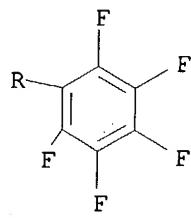
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

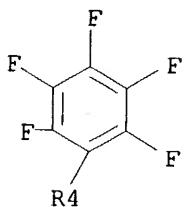
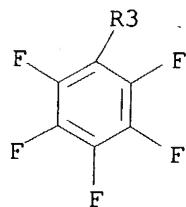
PAGE 1-A



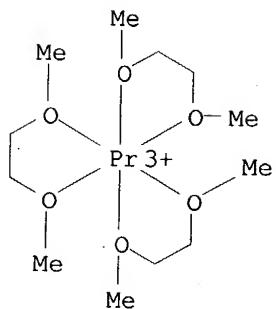
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PAGE 3-A

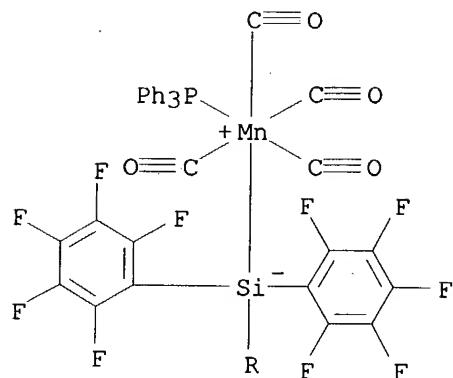


CM 3

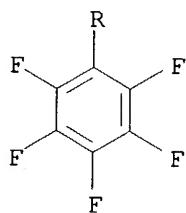


L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Manganese, tetracarbonyl(triphenylphosphine)[tris(pentafluorophenyl)silyl]-  
(8CI)  
MF C40 H15 F15 Mn O4 P Si  
CI CCS

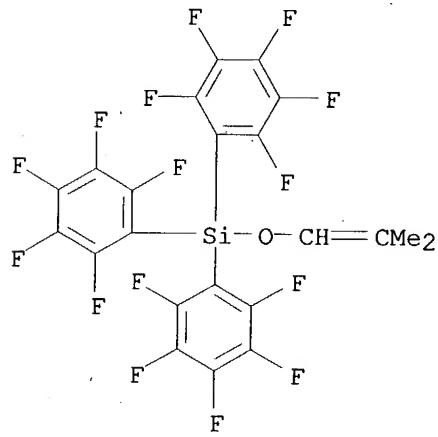
PAGE 1-A



PAGE 2-A



L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, [(2-methyl-1-propenyl)oxy]tris(pentafluorophenyl)- (9CI)  
MF C22 H7 F15 O Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

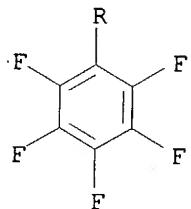
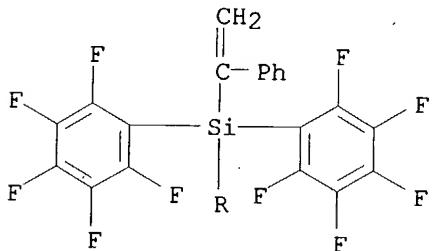
L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

IN Mercurate(2-), bis[tris(pentafluorophenyl)germyl]bis[tris(pentafluorophenyl)silyl]-, (T-4)- (9CI)  
MF C72 F60 Ge2 Hg Si2  
CI CCS, COM

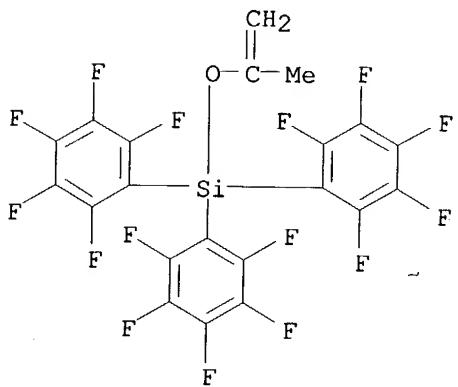
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, tris(pentafluorophenyl)(1-phenylvinyl)- (8CI)  
MF C26 H7 F15 Si



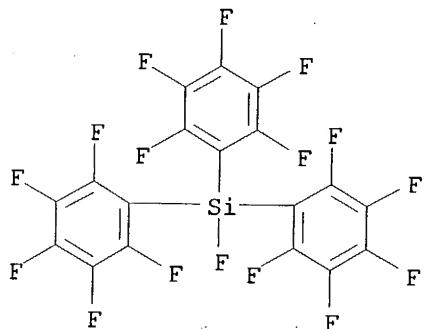
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, [(1-methylethylene)oxy]tris(pentafluorophenyl)- (9CI)  
MF C21 H5 F15 O Si



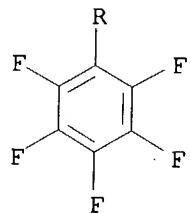
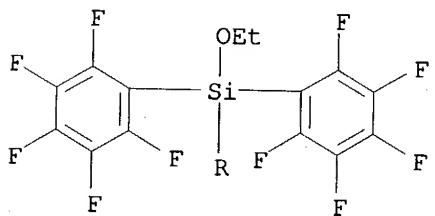
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, fluorotris(pentafluorophenyl)- (9CI)  
MF C18 F16 Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, ethoxytris(pentafluorophenyl)- (8CI, 9CI)  
MF C20 H5 F15 O Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

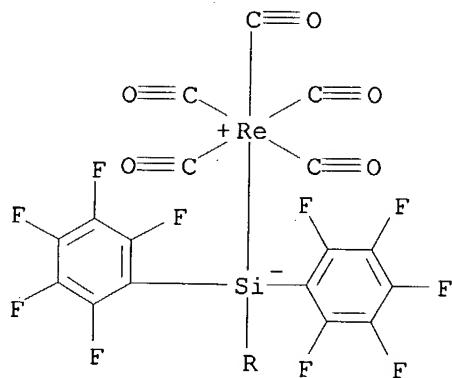
KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Mercurate(2-), [ $\mu$ -[bis(pentafluorophenyl)germylene]]tetrakis[tris(penta  
fluorophenyl)silyl]di- (9CI)  
MF C84 F70 Ge Hg2 Si4  
CI CCS, COM

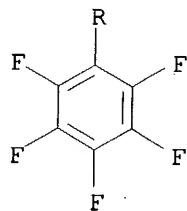
\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Rhenium, pentacarbonyl[tris(pentafluorophenyl)silyl]- (8CI)  
MF C23 F15 O5 Re Si  
CI CCS

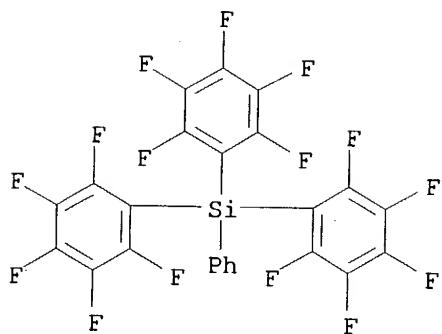
PAGE 1-A



PAGE 2-A



L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, tris(pentafluorophenyl)phenyl- (8CI, 9CI)  
MF C24 H5 F15 Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

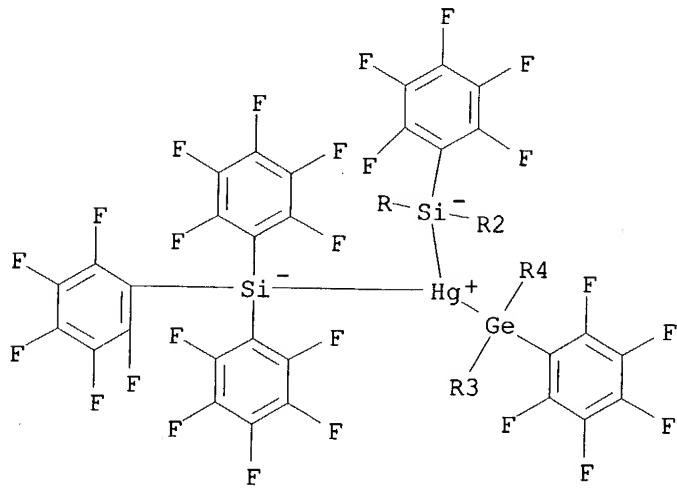
L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Praseodymium(3+), tris(1,2-dimethoxyethane-O,O')-, (OC-6-11)-,  
(T-4)-bis[tris(pentafluorophenyl)germyl]bis[tris(pentafluorophenyl)silyl]m-  
ercurate(2-) [tris(pentafluorophenyl)germyl]bis[tris(pentafluorophenyl)sil-  
yl]mercurate(1-) (1:1:1) (9CI)  
MF C72 F60 Ge2 Hg Si2 . C54 F45 Ge Hg Si2 . C12 H30 O6 Pr

CM 1

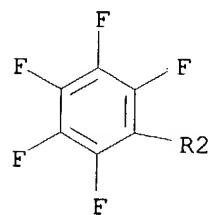
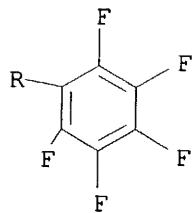
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CM 2

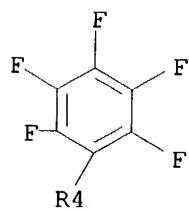
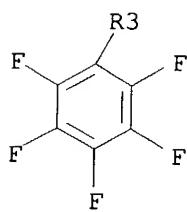
PAGE 1-A



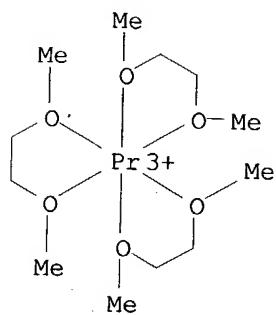
PAGE 2-A



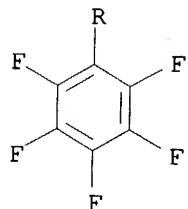
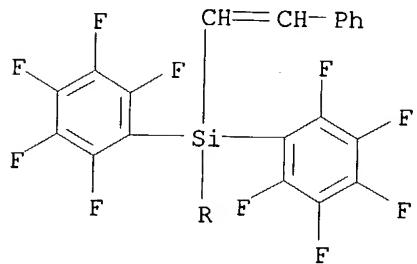
PAGE 3-A



CM 3

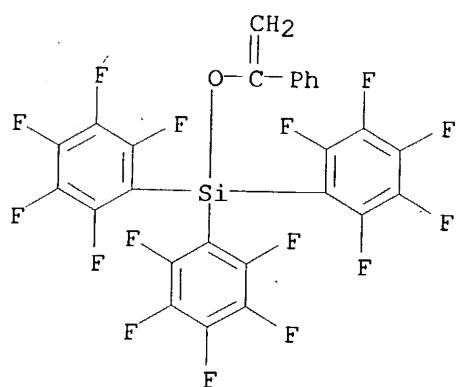


L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, tris(pentafluorophenyl)styryl- (8CI)  
MF C26 H7 F15 Si



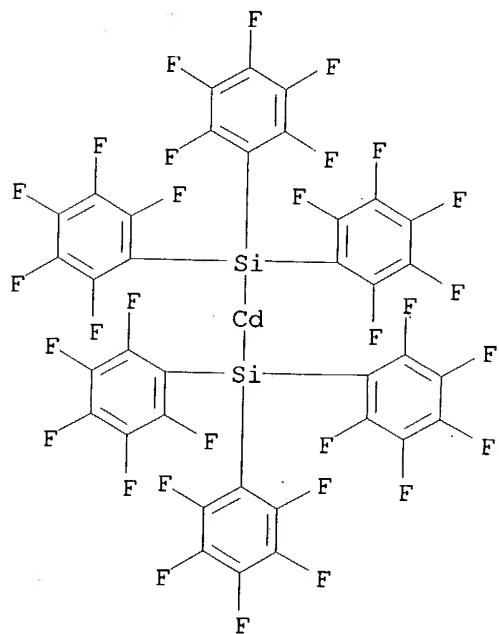
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, tris(pentafluorophenyl)[(1-phenylethenyl)oxy]- (9CI)  
MF C26 H7 F15 O Si



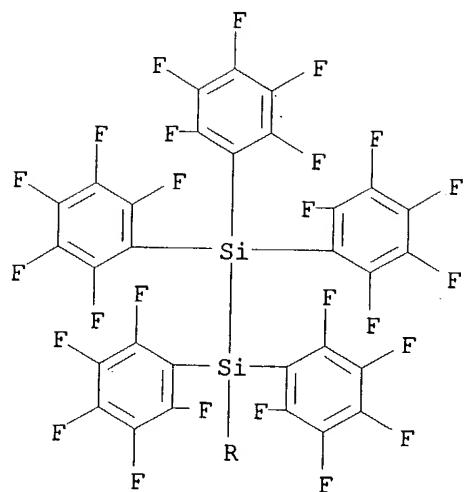
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Cadmium, bis[tris(pentafluorophenyl)silyl]- (9CI)  
MF C36 Cd F30 Si2

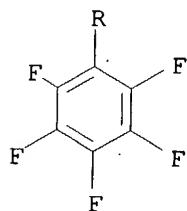


L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Disilane, hexakis(pentafluorophenyl)- (8CI, 9CI)  
MF C36 F30 Si2

PAGE 1-A



PAGE 2-A



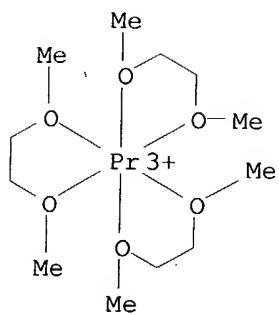
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Praseodymium(3+), tris(1,2-dimethoxyethane-O,O')-, (OC-6-11)-,  
[μ-[bis(pentafluorophenyl)germylene]]tetrakis[tris(pentafluorophenyl)si-  
lyl]dimercurate(2-) (2:3) (9CI)  
MF C84 F70 Ge Hg2 Si4 . 2/3 C12 H30 O6 Pr

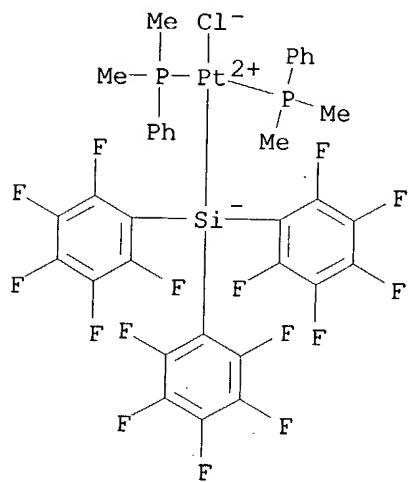
CM 1

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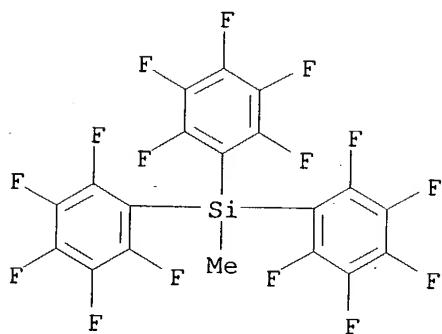
CM 2



L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Platinum, chlorobis(dimethylphenylphosphine)[tris(pentafluorophenyl)silyl]-  
, trans- (8CI)  
MF C34 H22 Cl F15 P2 Pt Si  
CI CCS



L57 35 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Silane, methyltris(pentafluorophenyl)- (8CI, 9CI)  
MF C19 H3 F15 Si



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

ALL ANSWERS HAVE BEEN SCANNED

=>

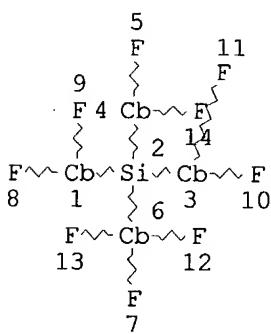
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FILE 'HCAPLUS' ENTERED AT 15:56:43 ON 22 OCT 2004  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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FILE COVERS 1907 - 22 Oct 2004 VOL 141 ISS 17  
FILE LAST UPDATED: 20 Oct 2004 (20041020/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE  
L48 STR



4 structures which  
are correct.

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 14

## STEREO ATTRIBUTES: NONE

L50 39 SEA FILE=REGISTRY SSS FUL L48  
 L52 51 SEA FILE=HCAPLUS ABB=ON L50  
 L53 1 SEA FILE=HCAPLUS ABB=ON L52 AND (EL OR ?LUMINES? OR LIGHT?(3A)  
 ?EMIT?)  
 L57 35 SEA FILE=REGISTRY ABB=ON L50/INC  
 L58 4 SEA FILE=REGISTRY ABB=ON L50 NOT L57  
 L59 18 SEA FILE=HCAPLUS ABB=ON L58  
 L60 17 SEA FILE=HCAPLUS ABB=ON L59 NOT L53

18 CA references  
 1 = applicant  
 Remaining 17 are  
 printed below

=> D L60 BIB ABS IND HITSTR 1-17

L60 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2000:525583 HCAPLUS  
 DN 133:252494  
 TI Intramolecular interactions in aromatic compounds: V. Electronic structure  
 of polyfluoroaromatic silanes and related hydrocarbons  
 AU Krupoder, S. A.; Okotrub, A. V.; Villem, N. V.; Villem, J. J.; Furin, G.  
 G.; Salakhutdinov, N. F.; Poleshchuk, O. Kh.  
 CS Institute of Organic Chemistry, Siberian Branch, Russian Academy of  
 Sciences, Novosibirsk, Russia  
 SO Russian Journal of General Chemistry (Translation of Zhurnal Obshchey  
 Khimii) (2000), 70(1), 101-110  
 CODEN: RJGCEK; ISSN: 1070-3632  
 PB MAIK Nauka/Interperiodica Publishing  
 DT Journal  
 LA English  
 AB The electronic structure of pentafluorophenyl-substituted silanes  
 ArnSiMe4-n (Ar = C6H5, C6F5, 4-FC6H4, 2,3,5,6-F4C5N; n = 1; Ar = C6H5,  
 C6F5, n = 2, 4) was studied by x-ray emission and He(I) photoelectron  
 spectroscopy. The He(I) photoelectron spectra were measured and  
 interpreted from MNDO calcns., anal. of the p-fluoro effect, and relative  
 intensities. Substitution of C6F5 for C6H5 in aryltrimethyl- and  
 diaryldimethylsilanes results in enhanced  $\pi$  interaction between the  
 aryl and SiMen groups (n = 2, 3) by higher  $\pi$  levels and has almost no

effect on the charge on the Si atom.

CC 29-6 (Organometallic and Organometalloidal Compounds)  
Section cross-reference(s): 22

ST electronic structure silane phenyl fluorophenyl MNDO; photoelectron spectrum silane phenyl fluorophenyl; x ray emission silane phenyl fluorophenyl; fluorine substituent effect photoelectron spectrum fluorophenylsilane

IT Electronic structure  
MNDO (molecular orbital)  
Photoelectron spectra  
X-ray emission  
(of Ph and polyfluoroarom. silanes)

IT Substituent effects  
(of fluorine in polyfluoroarom. silanes on photoelectron spectra)

IT Ionization potential  
(of polyfluoroarom. silanes)

IT Silanes

RL: PRP (Properties)  
(polyfluoroarom.; electronic structure determined by photoelectron spectra, x-ray emission and MNDO calcns.)

IT 455-17-4, 4-Fluorophenyl(trimethyl)silane 768-32-1,  
Trimethyl(phenyl)silane 778-24-5, Dimethyl(diphenyl)silane 1048-08-4,  
Tetraphenylsilane 1206-46-8, Pentafluorophenyl(trimethyl)silane  
**1524-78-3**, Tetrakis(pentafluorophenyl)silane 10536-62-6  
16297-29-3

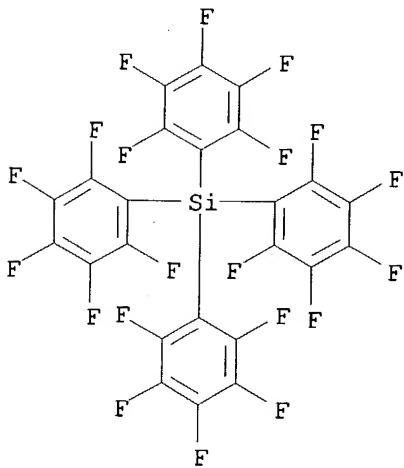
RL: PRP (Properties)  
(electronic structure determined by photoelectron spectra, x-ray emission and MNDO calcns.)

IT 75-76-3, Tetramethylsilane  
RL: PRP (Properties)  
(model compound; electronic structure determined by photoelectron spectra, x-ray emission and MNDO calcns.)

IT **1524-78-3**, Tetrakis(pentafluorophenyl)silane  
RL: PRP (Properties)  
(electronic structure determined by photoelectron spectra, x-ray emission and MNDO calcns.)

RN 1524-78-3 HCPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1998:490675 HCAPLUS

DN 129:149360

TI Olefin polymerization and process therefor

IN Van Tol, Maurits Frederik Hendrik

PA DSM N.V., Neth.; Van Tol, Maurits Frederik Hendrik

SO PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9830603	A1	19980716	WO 1997-NL696	19971215
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	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	NL 1004991	C2	19980715	NL 1997-1004991	19970114
	CA 2277886	AA	19980716	CA 1997-2277886	19971215
	AU 9853475	A1	19980803	AU 1998-53475	19971215
	EP 954540	A1	19991110	EP 1997-950491	19971215
	EP 954540	B1	20040728		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, PT, FI				
	CN 1248979	A	20000329	CN 1997-182023	19971215
	JP 2002514247	T2	20020514	JP 1998-530771	19971215
	AT 272078	E	20040815	AT 1997-950491	19971215
	US 6218487	B1	20010417	US 1999-352842	19990713
PRAI	NL 1997-1004991	A	19970114		
	US 1997-38160P	P	19970213		
	WO 1997-NL696	W	19971215		

OS MARPAT 129:149360

AB Olefins are polymerized by contact with a transition metal catalyst, wherein the cocatalyst is either XR4 (X = Si, Ge, Sn, Pb; R = H, alkyl, aryl, arylalkyl, alkylaryl; at least one R is not H and contains one or more halogen atoms) or is [X'R'5]-Y+ (X' = Si, Ge, Sn, Pb; R' = H, alkyl, aryl, arylalkyl, alkylaryl; at least one R is not hydrogen and contains one or more halogen atoms; Y+ = cation); the cocatalyst replaces aluminoxanes which can be difficult to remove from polyolefin products. Thus, [(C6F5)4SiMe]-[Li(THF)4]+ was prepared and used with bis(cyclopentadienyl)zirconium monohydride monochloride and trioctylaluminum to polymerize ethylene.

IC ICM C08F004-60

ICS C08F010-00; C07F007-08

CC 35-3 (Chemistry of Synthetic High Polymers)

ST ethylene polymn catalyst organosilane organozirconium; polyolefin prodn catalyst silicon germanium

IT Polymerization catalysts

(metallocene; organosilane and -germane cocatalysts for polymerization of olefins)

IT Polymerization catalysts

(organosilane and -germane catalysts for polymerization of olefins)

IT Polyolefins

IT RL: IMF (Industrial manufacture); PREP (Preparation)  
(organosilane and -germane cocatalysts for polymerization of olefins)  
IT 67108-80-9, Bis(pentamethylcyclopentadienyl)dimethylzirconium  
IT RL: CAT (Catalyst use); USES (Uses)  
(catalyst; organogermanium cocatalysts for polymerization of ethylene)  
IT 1070-00-4, Trioctylaluminum 37342-97-5 178762-91-9 210771-60-1  
IT RL: CAT (Catalyst use); USES (Uses)  
(catalyst; organosilane cocatalysts for polymerization of ethylene)  
IT 5121-90-4P  
IT RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(cocatalyst intermediate; organosilane and -germane cocatalysts for  
polymerization of ethylene)  
IT 1524-78-3P, Tetrakis(pentafluorophenyl)silane.  
IT RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(cocatalyst intermediate; organosilane cocatalysts for polymerization of  
ethylene)  
IT 10038-98-9P, Tetrachlorogermane  
IT RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(cocatalyst starting material; organogermanium cocatalysts for  
polymerization  
of ethylene)  
IT 917-54-4, Methylolithium 1074-91-5, 1-Bromo-2,3,4,5-tetrafluorobenzene  
IT RL: RCT (Reactant); RACT (Reactant or reagent)  
(cocatalyst starting material; organosilane and -germane cocatalysts  
for polymerization of ethylene)  
IT 344-04-7, Pentafluorobromobenzene 10026-04-7, Tetrachlorosilane  
IT RL: RCT (Reactant); RACT (Reactant or reagent)  
(cocatalyst starting material; organosilane cocatalysts for polymerization  
of  
ethylene)  
IT 13628-95-0P  
IT RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)  
(cocatalyst; organogermanium cocatalysts for polymerization of ethylene)  
IT 1452-12-6P, Tetrakis(pentafluorophenyl)germane  
IT RL: CAT (Catalyst use); IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent); USES (Uses)  
(cocatalyst; organogermanium cocatalysts for polymerization of ethylene)  
IT 210771-66-7DP, reaction products with triphenylchloromethane  
210771-66-7P  
IT RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(cocatalyst; organogermanium cocatalysts for polymerization of ethylene)  
IT 210771-45-2DP, reaction products with triphenylchloromethane  
210771-45-2P 210771-81-6P  
IT RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)  
(cocatalyst; organosilane cocatalysts for polymerization of ethylene)  
IT 52910-17-5P  
IT RL: CAT (Catalyst use); IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent); USES (Uses)  
(cocatalyst; organosilane cocatalysts for polymerization of ethylene)  
IT 76-83-5DP, Triphenylchloromethane, reaction products with organosilanes  
and organogermanes  
IT RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)

(cocatalysts; organosilane and -germane cocatalysts for polymerization of ethylene)

IT 210771-81-6DP, reaction products with triphenylchloromethane  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)

(cocatalysts; organosilane cocatalysts for polymerization of ethylene)

IT 925-90-6, Ethylmagnesium bromide  
RL: NUU (Other use, unclassified); USES (Uses)

(in preparation of organosilane cocatalysts for polymerization of ethylene)

IT 9002-88-4P  
RL: IMF (Industrial manufacture); PREP (Preparation)

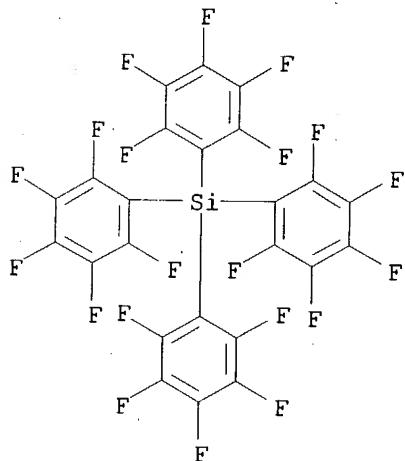
(organosilane and -germane cocatalysts for polymerization of ethylene)

IT 1524-78-3P, Tetrakis(pentafluorophenyl)silane  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)

(cocatalyst intermediate; organosilane cocatalysts for polymerization of ethylene)

RN 1524-78-3 HCPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



IT 210771-45-2DP, reaction products with triphenylchloromethane  
210771-45-2P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation);  
USES (Uses)

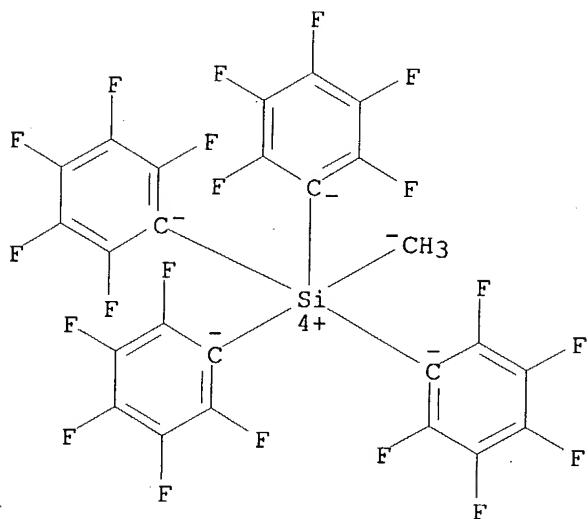
(cocatalyst; organosilane cocatalysts for polymerization of ethylene)

RN 210771-45-2 HCPLUS

CN Lithium(1+), tetrakis(tetrahydrofuran)-, (T-4)-, methyltetrakis(pentafluorophenyl)silicate(1-) (9CI) (CA INDEX NAME)

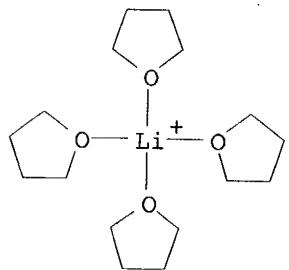
CM 1

CRN 210771-44-1  
CMF C25 H3 F20 Si  
CCI CCS



CM 2

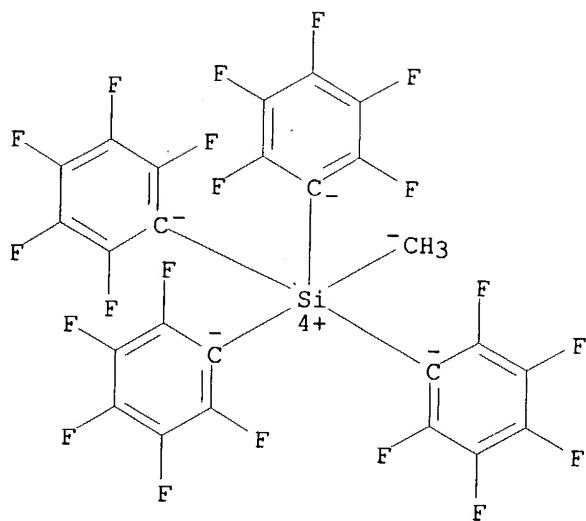
CRN 48186-27-2  
CMF C16 H32 Li O4  
CCI CCS



RN 210771-45-2 HCPLUS  
CN Lithium(1+), tetrakis(tetrahydrofuran)-, (T-4)-,  
methyltetrakis(pentafluorophenyl)silicate(1-) (9CI) (CA INDEX NAME)

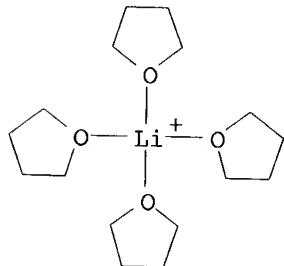
CM 1

CRN 210771-44-1  
CMF C25 H3 F20 Si  
CCI CCS



CM 2

CRN 48186-27-2  
CMF C16 H32 Li O4  
CCI CCS



RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1996:58862 HCAPLUS  
DN 124:232542  
TI A convenient preparation of pentafluorophenyl(fluoro)silanes: reactivity  
of pentafluorophenyltrifluorosilane  
AU Frohn, H. J.; Giesen, M.; Klose, A.; Lewin, A.; Bardin, V. V.  
CS Fachgebiet Anorganische Chemie, Gerhard-Mercator-Universitaet Duisburg,  
Lotharstr. 1, Duisburg, D-47048, Germany  
SO Journal of Organometallic Chemistry (1996), 506(1-2), 155-64  
CODEN: JORCAI; ISSN: 0022-328X  
PB Elsevier  
DT Journal  
LA English  
OS CASREACT 124:232542

AB Pentafluorophenyl(fluoro)silanes ( $C_6F_5$ ) $n$ SiF $4-n$  ( $n = 1, 2$ ) were prepared from the corresponding ethoxysilanes by sequential chlorodeethoxylation with SOC $l_2$  and fluoridation of chlorosilanes with SbF $3$ . The conversion of C $6F_5$ Si(OEt) $3$  and C $6F_5$ SiCl $3$  into C $6F_5$ SiF $3$  with anhydrous HF is described. Some reactions of C $6F_5$ SiF $3$  with electrophiles and nucleophiles were studied.

CC 29-6 (Organometallic and Organometalloidal Compounds)

ST pentafluorophenylfluorosilane prep<sup>n</sup> reaction; silane pentafluorophenylfluoro prep<sup>n</sup> reaction; ethoxysilane chlorodeethoxylation fluoridation

IT Fluorination  
(of pentafluorophenyl(chloro)silanes)

IT Silanes  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(pentafluorophenyl(fluoro)silanes; preparation and reactions with electrophiles and nucleophiles)

IT Ethoxylation  
(retro, chloro-; of pentafluorophenyl(ethoxy)silanes)

IT 1524-78-3, Tetrakis(pentafluorophenyl)silane 20160-39-8,  
Chlorotris(pentafluorophenyl)silane 35370-01-5,  
Fluorotris(pentafluorophenyl)silane  
RL: PRP (Properties)  
(NMR)

IT 371-20-0P, Diethoxy(fluoro)borane 86802-17-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(formation from pentafluorophenyltrietoxysilane and boron fluoride etherate)

IT 344-04-7P, Bromopentafluorobenzene 174743-13-6P,  
Bromodifluoro(pentafluorophenyl)silane  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(formation from pentafluorophenyltrifluorosilane and bromine)

IT 14188-35-3P, Dibromodifluorosilane 18356-67-7P, Tribromo(fluoro)silane  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(formation from pentafluorophenyltrifluorosilane and bromine/aluminum bromide)

IT 7783-61-1P, Silicon tetrafluoride 121827-61-0P,  
Bis(pentafluorophenyl)iodonium  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(formation from pentafluorophenyltrifluorosilane and fluoroiodonium fluoroantimonate)

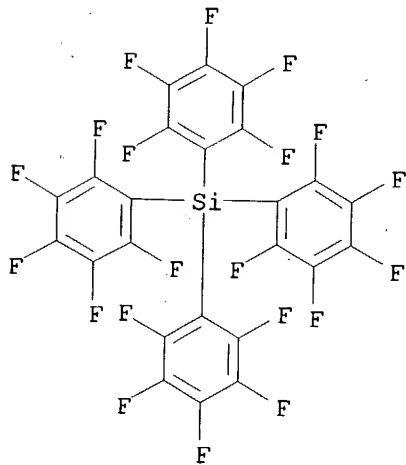
IT 20160-47-8P, Chloro(ethoxy)bis(pentafluorophenyl)silane 174743-04-5P,  
Ethoxydifluoro(pentafluorophenyl)silane 174743-05-6P,  
Diethoxy(fluoro)(pentafluorophenyl)silane 174743-08-9P,  
Dichloro(ethoxy)(pentafluorophenyl)silane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(intermediate; convenient preparation of fluorophenyl(fluoro)silanes: reactivity of fluorophenylfluorosilane)

IT 174743-11-4P, Dibutyl(ethoxy)(pentafluorophenyl)silane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with acetyl chloride/zinc chloride)

IT 20083-38-9P, Trichloro(pentafluorophenyl)silane 20160-45-6P,  
Dichlorobis(pentafluorophenyl)silane  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction with antimony fluoride)

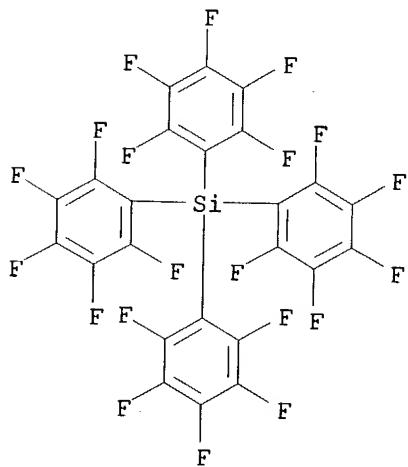
IT 5272-26-4P, Trifluoro(pentafluorophenyl)silane

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reactions with electrophiles and nucleophiles)  
IT 27585-17-7P, Difluorobis(pentafluorophenyl)silane  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and reactions with electrophiles and nucleophiles)  
IT 174743-06-7P, Difluoro(pentafluorophenyl)(1-piperidino)silane  
174743-07-8P, Fluoro(pentafluorophenyl)bis(1-piperidino)silane  
174743-09-0P, Tributyl(pentafluorophenyl)silane 174743-10-3P,  
Dibutyl(fluoro)(pentafluorophenyl)silane 174743-12-5P,  
Dibutyl(4-butyltetrafluorophenyl)(pentafluorophenyl)silane  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
IT 693-03-8, Bromo(butyl)magnesium  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with pentafluorophenyltrifluorosilane)  
IT 13888-69-2, Diethoxybis(pentafluorophenyl)silane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with thionyl chloride/pyridinium chloride)  
IT 20083-34-5, Triethoxy(pentafluorophenyl)silane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactions with hydrofluoric acid, thionyl chloride/pyridinium  
chloride, boron fluoride and other reagents)  
IT 109-72-8, Butyllithium, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reactions with pentafluorophenyltrifluorosilane)  
IT 1524-78-3, Tetrakis(pentafluorophenyl)silane  
RL: PRP (Properties)  
(NMR)  
RN 1524-78-3 HCPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



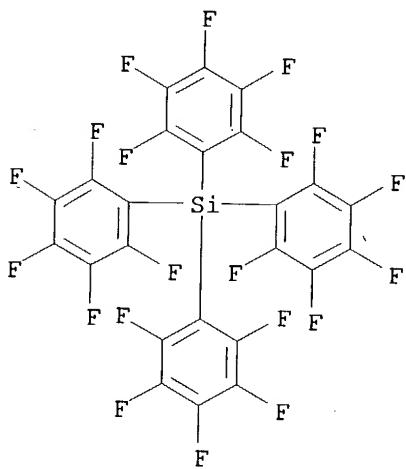
L60 ANSWER 4 OF 17 HCPLUS COPYRIGHT 2004 ACS ón STN  
AN 1992:602108 HCPLUS  
DN 117:202108  
TI Thermodynamic simulation of deposition of molybdenum and tungsten  
disilicides in metalorganic CVD processes  
AU Kuznetsov, F. A.; Titov, V. A.; Golubenko, A. N.; Titov, A. A.

CS Inst. Inorg. Chem., Novosibirsk, 630090, USSR  
SO Proceedings of SPIE-The International Society for Optical Engineering (1992), 1783(Int. Conf. Microelectron., 1992), 541-50  
CODEN: PSISDG; ISSN: 0277-786X  
DT Journal  
LA English  
AB Modeling of disilicide deposition in the systems with volatile metalorg. and fluorinated Si organic compds. was performed for a number of systems M-Si-C-H-Ar, M-Si-C-O-Cl-H-Ar, M-Si-C-H-F-Ar, M-Si-C-O-F-H-Ar (M = W, Mo). In some of these systems (especially with fluorinated compds.) there are wider regions of quasi-equilibrium deposition of disilicides.  
CC 75-1 (Crystallography and Liquid Crystals)  
Section cross-reference(s): 69  
ST deposition molybdenum tungsten silicide metalorg simulation  
IT Vapor deposition processes  
    (of molybdenum and tungsten disilicide, thermodn. simulation of metalorg.)  
IT 12039-88-2, Tungsten silicide (WSi<sub>2</sub>) 12136-78-6, Molybdenum silicide (MoSi<sub>2</sub>)  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
    (deposition of, thermodn. simulation of metalorg. vapor-phase)  
IT 1271-33-6  
RL: RCT (Reactant); RACT (Reactant or reagent)  
    (reaction of, with silicon compds. in tungsten disilicide deposition)  
IT 1524-78-3 122571-42-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
    (reaction of, with tungsten cyclopentadienyl complex in tungsten disilicide deposition)  
IT 1524-78-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
    (reaction of, with tungsten cyclopentadienyl complex in tungsten disilicide deposition)  
RN 1524-78-3 HCPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 5 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN  
AN 1992:539948 HCPLUS  
DN 117:139948

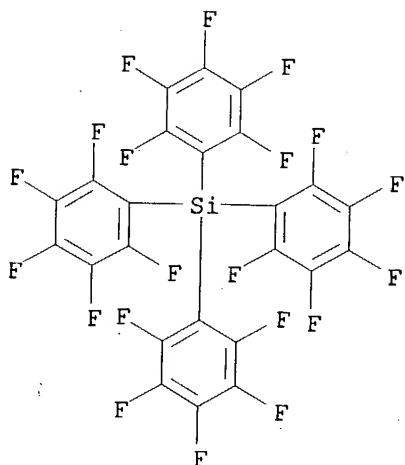
TI Photoelectron helium spectra of the pentafluorophenyl derivatives of Group IV and V elements  
AU Petrachenko, N. E.; Vovna, V. I.; Furin, G. G.  
CS Nauchno-Issled. Fiz.-Tekh.-Inst., Vladivostok, Russia  
SO Zhurnal Fizicheskoi Khimii (1992), 66(2), 515-20  
CODEN: ZFKHA9; ISSN: 0044-4537  
DT Journal  
LA Russian  
AB In the compds. of tricoordinated P and As, intramol. interaction is observed of a lone electron pair with the  $\pi$ -MO fluorinated benzene ring, while in the P-containing compds. this interaction is stronger, than in As-containing compds. In tetracoordinated compds., the interaction between orbitals of the group X = O (X=P,As) with groups of  $\pi$ -MO substituents was not observed. The basic contribution to the bonding is from  $\sigma$ -orbitals localized on X-C bonds.  
CC 73-6 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST photoelectron fluorophenyl Group IVA VA deriv; phenyl fluoro Group IVA VA photoelectron; bonding fluorophenyl Group IVA VA deriv  
IT Bond  
(in fluorophenyl derivs. of Group IVA and VA elements)  
IT Photoelectron spectroscopy  
(of pentafluorophenyl derivs. of Group IVA and VA elements)  
IT 1065-49-2 1259-34-3 1259-35-4, Tris(pentafluorophenyl)phosphine  
1452-12-6 1524-78-3 2729-11-5, Tris(pentafluorophenyl)phosphine  
oxide 18005-77-1  
RL: PRP (Properties)  
(photoelectron spectrum of)  
IT 1524-78-3  
RL: PRP (Properties)  
(photoelectron spectrum of)  
RN 1524-78-3 HCAPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1989:534254 HCAPLUS  
DN 111:134254  
TI Reactions of arylmethylsilanes and tetraarylsilanes with xenon difluoride

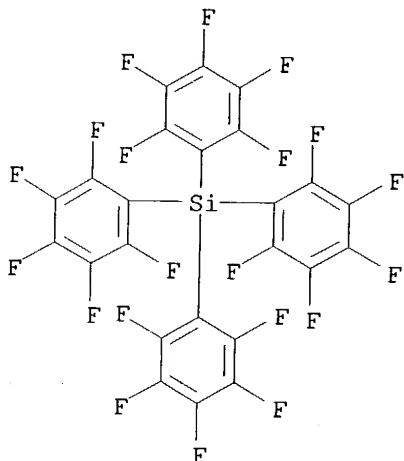
in the presence of fluoride ions  
AU Bardin, V. V.; Stennikova, I. V.; Furin, G. G.; Leshina, T. V.; Yakobson, G. G.  
CS Novosib. Inst. Org. Khim., Novosibirsk, USSR  
SO Zhurnal Obshchey Khimii (1988), 58(11), 2580-8  
CODEN: ZOKHA4; ISSN: 0044-460X  
DT Journal  
LA Russian  
OS CASREACT 111:134254  
AB The reaction of RnSiMe4-n (R = C6F5, p-F3CC6F4, tetrafluoro-4-pyridyl; n = 1, 2, 4) with XeF2 in the presence of MF (M = K, Rb, Cs) gave protodesilylation products and diaryls. The reaction is a convenient method for generation of polyfluoroaryl and polyfluorohetaryl radicals under mild conditions.  
CC 29-6 (Organometallic and Organometalloidal Compounds)  
Section cross-reference(s): 25, 27  
ST arylmethyldisilane xenon difluoride reaction; pyridylmethyldisilane xenon difluoride reaction; xenon difluoride fluoroarylmethyldisilane reaction; protodesilylation arylmethyldisilane xenon difluoride reaction; radical polyfluoroaryl polyfluorohetaryl  
IT Heterocyclic compounds  
RL: PROC (Process)  
(aromatic, fluoro, radicals, generation of, from reaction of hetarylmethyldisilanes with xenon difluoride)  
IT Aromatic hydrocarbons, preparation.  
RL: PREP (Preparation)  
(fluoro, radicals, generation of, from reaction of arylmethyldisilanes with xenon difluoride)  
IT Silylation  
(retro, in reaction of arylmethyldisilanes with xenon difluoride)  
IT 768-32-1, Trimethylphenylsilane 1048-08-4, Tetraphenylsilane  
3728-43-6, Trimethyl-p-tolylsilane 4405-33-8, Trimethyl-p-nitrophenylsilane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(attempted reaction of, with xenon difluoride)  
IT 92-52-4P, 1,1'-Biphenyl, preparation 98-08-8P 344-04-7P 363-72-4P  
434-90-2P 581-80-6P 651-80-9P 2875-18-5P 2875-19-6P 3511-91-9P  
17823-47-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
IT 7789-23-3, Potassium fluoride 13400-13-0, Cesium fluoride 13446-74-7,  
Rubidium fluoride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of arylmethyldisilanes with xenon difluoride in presence of)  
IT 13709-36-9, Xenon difluoride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with arylmethyldisilanes)  
IT 75-25-2, Tribromomethane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with trimethylpentafluorophenylsilane and xenon difluoride)  
IT 312-75-4 1206-46-8 1524-78-3 16297-29-3 122571-41-9  
122571-42-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with xenon difluoride)  
IT 1524-78-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with xenon difluoride)  
RN 1524-78-3 HCPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1984:510434 HCAPLUS  
 DN 101:110434  
 TI Pentafluorophenyliodine(V) compounds, part 1. Preparation of pentafluorophenyliodine tetrafluoride and other aryliodine tetrafluorides by reaction of iodine pentafluoride with arylsilanes  
 AU Frohn, Hermann Josef  
 CS Fachber.-Chem., Univ. Gesamthochsch. Duisburg, Duisburg, 4100/1, Fed. Rep. Ger.  
 SO Chemiker-Zeitung (1984), 108(4), 146-7  
 CODEN: CMKZAT; ISSN: 0009-2894  
 DT Journal  
 LA German  
 OS CASREACT 101:110434  
 AB RIF<sub>4</sub> (R = C<sub>6</sub>F<sub>5</sub>, Ph, p-F, -Me-, -MeOC<sub>6</sub>H<sub>4</sub>) were prepared by treating IF<sub>5</sub> with RnSiX<sub>4-n</sub> (X = F, Me; n = 1-4). The effect of solvent and pyridine on the reaction was studied.  
 CC 25-3 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 Section cross-reference(s): 29  
 ST fluorophenyliodine tetrafluoride; phenyliodine tetrafluoride; iodine pentafluorophenyl tetrafluoride; silane phenyl iodine pentafluoride reaction  
 IT Solvent effect  
     (on reaction of iodine pentafluoride with phenylsilanes)  
 IT 22121-26-2P 22121-27-3P 29848-54-2P 38091-68-8P 91679-75-3P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
     (preparation of)  
 IT 110-86-1, uses and miscellaneous  
 RL: USES (Uses)  
     (reaction of iodine pentafluoride with phenylsilanes in presence of)  
 IT 368-47-8 1048-08-4 1206-46-8 1524-78-3 5272-26-4  
 10256-83-4 10536-62-6 13688-78-3 24727-90-0 35370-01-5  
 50625-30-4 63523-07-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
     (reaction of, with iodine pentafluoride)  
 IT 7783-66-6

IT RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with phenylsilanes)  
IT 75-05-8, uses and miscellaneous  
RL: PRP (Properties)  
(solvent effect of, on reaction of iodine pentafluoride with  
phenylsilanes)  
IT 1524-78-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with iodine pentafluoride)  
RN 1524-78-3 HCAPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



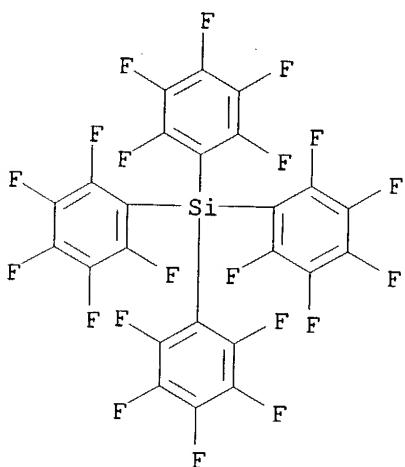
L60 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1978:624407 HCAPLUS  
DN 89:224407  
TI The crystal structure of tetrakis(pentafluorophenyl)silane  
AU Karipides, Anastas; Foerst, Barbara  
CS Dep. Chem., Miami Univ., Oxford, OH, USA  
SO Acta Crystallographica, Section B: Structural Crystallography and Crystal Chemistry (1978), B34(11), 3494-6  
CODEN: ACBCAR; ISSN: 0567-7408  
DT Journal  
LA English  
AB The crystal structure of  $(C_6F_5)_4Si$  was determined from 3-dimensional single-crystal x-ray data collected on a computer-automated diffractometer. The compound crystallizes in space group I41/a with cell dimensions of a 17.165 (12) and c 8.128 (8) Å; Z = 4. The  $(C_6F_5)_4Si$  mols. have S4 crystallog. imposed symmetry. Full-matrix least squares refinement yielded a conventional R factor of 0.070.  
CC 75-5 (Crystallization and Crystal Structure)  
ST structure pentafluorophenylsilane; fluorophenylsilane structure; silane pentafluorophenyl structure; phenyl pentafluorosilane structure  
IT Crystal structure  
Molecular structure  
(of tetrakis(pentafluorophenyl)silane)  
IT 1524-78-3  
RL: PRP (Properties)  
(crystal structure of)

IT 1524-78-3

RL: PRP (Properties)  
(crystal structure of)

RN 1524-78-3 HCAPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

L60 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1973:123476 HCAPLUS

DN 78:123476

TI NMR studies of pentafluorophenyl-substituted silanes. I. Relations between chemical shifts, coupling constants, and (p-d)π interactions

AU Haegele, Gerhard; Weidenbruch, Manfred

CS Inst. Anorg. Chem., Univ. Duesseldorf, Duesseldorf, Fed. Rep. Ger.

SO Chemische Berichte (1973), 106(2), 460-70

CODEN: CHBEAM; ISSN: 0009-2940

DT Journal

LA German

AB The 60-100 MHz 19F-NMR spectra of 21 silanes RnSiX4-n (R = C6F5, n = 1-4, X = H, alkyl, halo, or amino), RSiMe2SiMe2R, and RSiMe2SiMe3 were determined and analyzed using [AX]2M approxns. The relations between the title parameters were discussed in terms of the π-acceptor action of the SiX groups and long-range interannular F-F and F-H couplings.

CC 22-2 (Physical Organic Chemistry)

ST fluorophenylsilane NMR; silane pentafluorophenyl NMR; fluorine 19 NMR  
fluorophenylsilane; pi acceptor fluorophenylsilane

IT Conjugation

(in pentafluorosilanes, NMR in relation to)

IT Spin, nuclear coupling

(of fluorine with fluorine, in pentafluorophenylsilanes, conjugation in relation to)

IT Nuclear magnetic resonance

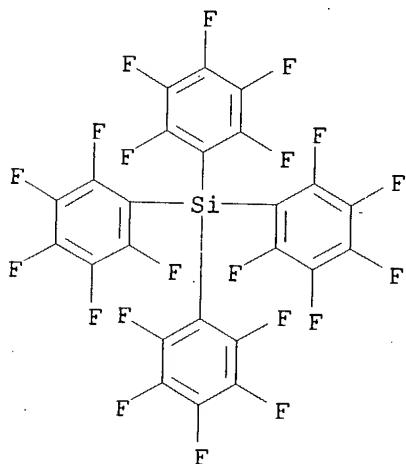
(of fluorine-19, of pentafluorophenylsilanes, conjugation in relation to)

IT 1206-46-8 1524-78-3 5272-26-4 10536-62-6 17067-70-8  
17067-71-9 18920-98-4 20160-39-8 21655-08-3 27585-17-7  
35369-97-2 35369-98-3 35370-01-5

RL: PRP (Properties)

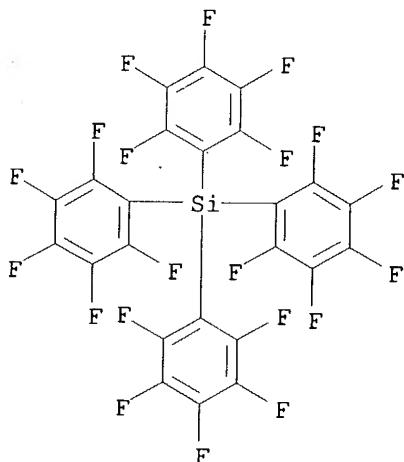
(NMR of, fluorine-19 of, π interactions in relation to)

IT 7782-41-4, properties  
 RL: PRP (Properties)  
 (NMR of, in pentafluorophenylsilanes)  
 IT 13888-77-2 20160-40-1 23761-73-1 23761-74-2 23761-75-3  
 23761-76-4 27490-05-7 27491-93-6 33558-55-3 33558-56-4  
 RL: PRP (Properties)  
 (NMR of,  $\pi$  interactions in relation to fluorine in)  
 IT 1524-78-3  
 RL: PRP (Properties)  
 (NMR of, fluorine-19 of,  $\pi$  interactions in relation to)  
 RN 1524-78-3 HCAPLUS  
 CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



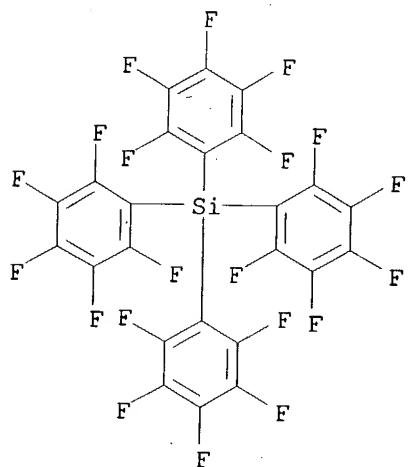
L60 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1969:119359 HCAPLUS  
 DN 70:119359  
 TI Fragmentation and rearrangement processes in the mass spectra of perhalogenoaromatic compounds. II. Pentafluorophenyl derivatives of group IV  
 AU Miller, Jack M.  
 CS Brock Univ., St. Catharines, ON, Can.  
 SO Canadian Journal of Chemistry (1969), 47(10), 1613-20  
 CODEN: CJCHAG; ISSN: 0008-4042  
 DT Journal  
 LA English  
 AB The mass spectra of compds. of the type  $(C_6F_5)_4M$  ( $M = Si, Ge, Sn, and Pb$ ) have been studied. Bond forming rearrangements were detected, involving F abstraction by the central atom, forming perfluorophenylene ions and neutral metal fluoride species. The heavier metals give simpler spectra and fragmentation schemes. The bulk of the ion current is carried by fluorocarbon ions for the Si derivative and by organometallic or metal fluoride ions in the other three cases,  $SnF_4^+$  and  $PbF_4^+$  forming the base peaks in their spectra. When  $M$  is C in the compds.  $(C_6F_5)_3COH$  and  $(C_6F_5)_2CO$  there is little evidence for rearrangements and transfer of F to the central C atom.  
 CC 71 (Electric Phenomena)  
 ST perhaloaroms mass spectra; silicon perfluorophenyls mass spectra; germanium perfluorophenyls mass spectra; tin perfluorophenyls mass

spectra; lead perfluorophenyls mass spectra; perfluorophenyls mass spectra; fluorophenyls mass spectra  
IT Mass spectra  
(of Group IVA fluorophenyl derivs.)  
IT 1065-49-2 1111-02-0 1452-12-6 **1524-78-3**  
RL: PRP (Properties)  
(mass spectrum of)  
IT **1524-78-3**  
RL: PRP (Properties)  
(mass spectrum of)  
RN 1524-78-3 HCAPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1968:477334 HCAPLUS  
DN 69:77334  
TI A direct preparation of some pentafluorophenyl-containing silanes  
AU Whittingham, A.; Jarvie, A. W. P.  
CS Univ. Aston, Birmingham, UK  
SO Journal of Organometallic Chemistry (1968), 13(1), 125-9  
CODEN: JORCAI; ISSN: 0022-328X  
DT Journal  
LA English  
AB The reaction of pentafluorobromobenzene with both tetraethoxysilane and tetrachlorosilane, by a modified Grignard method, leads to the formation of compds. of the type  $(C_6F_5)_nSiX_4-n$  (X = OEt and Cl and n = 1 - 4). These compds. have been characterized by phys. methods, elemental anal., interconversion and the preparation of derivs.  
CC 29 (Organometallic and Organometalloidal Compounds)  
ST silanes perfluorophenyl; silicon org compds  
IT 1206-46-8P **1524-78-3P** 10536-62-6P 13888-69-2P 20083-34-5P  
20083-38-9P 20160-45-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
IT **1524-78-3P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 1524-78-3 HCAPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1968:456104 HCAPLUS  
 DN 69:56104  
 TI The fluorine-19 NMR spectra of some pentafluorophenyl compounds of group IV elements  
 AU Jolley, K. W.; Sutcliffe, L. H.  
 CS Univ. Liverpool, Liverpool, UK  
 SO Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (1968), 24(8), 1191-203  
 CODEN: SAMCAS; ISSN: 1386-1425  
 DT Journal  
 LA English  
 AB Accurate chemical shifts were determined for the pentafluorophenyl F nuclei of a number of Group IV pentafluorophenyl compds. by the use of an extended lock in the HA mode. All the compds. studied have a very large ortho shift, the trends of which can be predicted by both the van der Waals elec. field theory and the through bond theory of Hruska, et al. The m- and p-19F chemical shifts were used to predict the  $\pi$ -electron accepting ability of the various substituents attached to the Group IV atom. The coupling consts. obtained from those compds. which give resolvable spectra supports the chemical shift work. 35 references.  
 CC 73 (Spectra and Other Optical Properties)  
 ST NMR F 19 fluorophenyls; fluorine 19 NMR; fluorophenyls NMR  
 IT Substituents (electron accepting ability of, of Group IV compds., N.M.R. in determination of)  
 IT Electron acceptors (nuclear magnetic resonance in determination of)  
 IT Nuclear magnetic resonance (of fluorine, in (pentafluorophenyl) derivs. of Group IV elements)  
 IT 801-79-6 1015-53-8 1058-08-8 1062-67-5 1062-71-1 1065-49-2  
 1080-51-9 1106-04-3 1111-02-0 1259-89-8 1262-57-3 1452-12-6  
 1524-78-3 10177-67-0 10177-68-1 10177-69-2 10360-39-1  
 RL: PRP (Properties) (nuclear magnetic resonance of fluorine in)

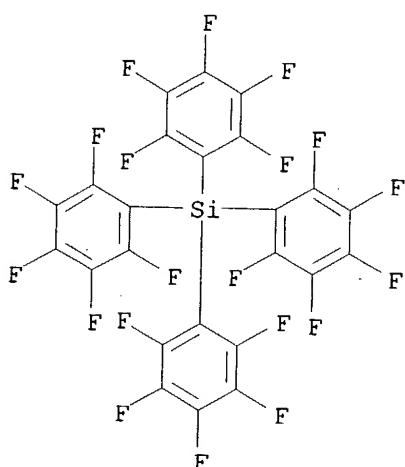
IT 1524-78-3

RL: PRP (Properties)

(nuclear magnetic resonance of fluorine in)

RN 1524-78-3 HCAPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1968:13065 HCAPLUS

DN 68:13065

TI Polyhalo-organometallic and -organometalloidal compounds. VIII.  
Preparation of some pentafluorophenyl substituted organosilicon compounds

AU Fearon, F. W. Gordon; Gilman, Henry

CS Iowa State Univ., Ames, IA, USA

SO Journal of Organometallic Chemistry (1967), 10(3), 409-19  
CODEN: JORCAI; ISSN: 0022-328X

DT Journal

LA English

AB The preparation and some properties of  $(C_6F_5)_nSiPh_4-n$  (where  $n = 1-4$ ) and  $(C_6F_5)_nPh_3-nSiX$  (where  $n = 1$  or  $2$  and  $X = H$  or  $Cl$ ) are described. In general, these compds. were obtained by the reaction of a (pentafluorophenyl)metallic compound with the corresponding chlorosilane. However,  $(C_6F_5)_nPh_3-nSiCl$  could not be obtained in this manner; they were prepared by the chlorination of the corresponding organosilicon hydrides. Evidence is presented which suggests that  $C_6Cl_5Li$  is more reactive towards  $ClSiPh_3$  than is  $C_6F_5Li$  under similar conditions. The reaction of an alkyl lithium compound with  $HPh_2SiC_6F_5$  leads predominantly to cleavage of the  $C_6F_5$  group from Si. The ir spectra of all the above compds. are discussed and the uv spectra of  $(C_6F_5)_nSiPh_4-n$  (where  $n = 1-4$ ) are reported. 18 references.

CC 29 (Organometallic and Organometalloidal Compounds)

ST SILANES PENTAFLUOROPHENYL; FLUORO AROM SILANES

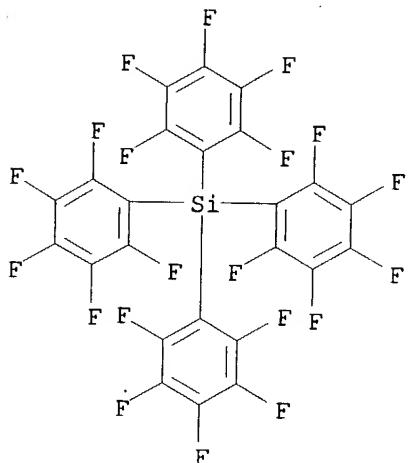
IT 1206-46-8P 1524-78-3P 17067-69-5P 17067-70-8P 17067-71-9P  
17067-73-1P 17067-74-2P 17067-75-3P 17067-76-4P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

IT 1524-78-3P

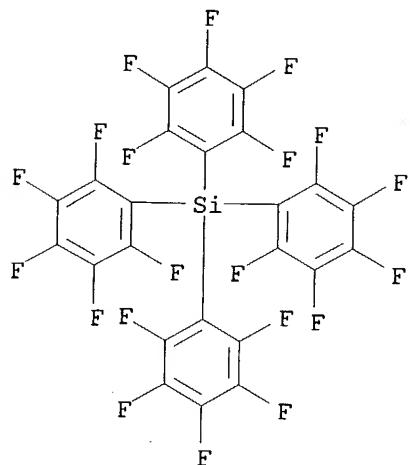
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 1524-78-3 HCAPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1965:498496 HCAPLUS  
DN 63:98496  
OREF 63:18136a-b  
TI Pentafluorophenyl organometallic compounds of group IV elements  
AU Tamborski, C.; Soloski, E. J.; Dec, S. M.  
CS Wright Patterson Air Force Base, Dayton, OH  
SO Journal of Organometallic Chemistry (1965), 4(6), 446-54  
CODEN: JORCAI; ISSN: 0022-328X  
DT Journal  
LA English  
AB The synthesis of pentafluorophenyl group IV elements  $(C_6F_5)_4Si$ ,  $(C_6F_5)_4Ge$ ,  $(C_6F_5)_4Sn$ ,  $(C_6F_5)_4Pb$ ,  $(C_5H_5)_2Ti$   $(C_5F_5)_2$  and  $(C_6H_5)_2Zr(C_6F_5)_2$  is reported. The above compounds are prepared through the reaction of the appropriate metal halide and pentafluorophenyllithium. The various pentafluorophenyl derivatives are subjected to the following studies: infrared and vapor phase chromatography analysis, acid and base hydrolysis, thermal stability, and reactions with bromine and lithium.  
CC 39 (Organometallic and Organometalloidal Compounds)  
IT Organometallic compounds  
(heterocyclic)  
IT Heterocyclic compounds  
(metal complexes)  
IT Spectra, infrared  
(of tetrakis(pentafluorophenyl) derivs. of Group IV elements)  
IT 1065-49-2, Tin, tetrakis(pentafluorophenyl)- 1111-02-0, Lead,  
tetrakis(pentafluorophenyl)- 1452-12-6, Germane,  
tetrakis(pentafluorophenyl) 1524-78-3, Silane,  
tetrakis(pentafluorophenyl)- 12097-97-1, Zirconium,  
dicyclopentadienylbis(pentafluorophenyl)- 12155-89-4, Titanium,  
dicyclopentadienylbis(pentafluorophenyl)-  
(preparation of)  
IT 1524-78-3, Silane, tetrakis(pentafluorophenyl)-  
(preparation of)  
RN 1524-78-3 HCAPLUS

CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1964:17001 HCAPLUS

DN 60:17001

OREF 60:3009f-g

TI Tetrakis(pentafluorophenyl)silane

IN Pummer, Walter J.; Wall, Leo A.

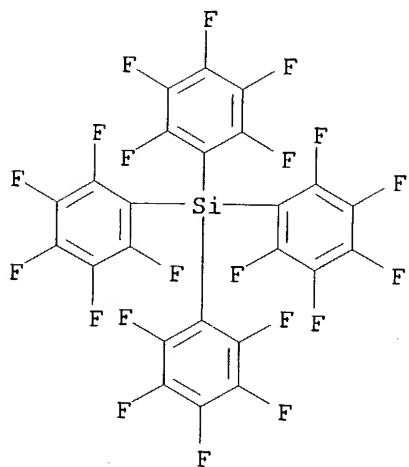
PA United States Dept. of the Navy

SO 1 p.

DT Patent

LA Unavailable

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3109855	-----	19631105	US	19610626
AB	Division of U.S. 3,046,313 (CA 57, 15003a). Pentafluorobromobenzene (I) is converted to the Grignard reagent and the Grignard reagent is treated with SiCl <sub>4</sub> to give the title compound, which can be used as a fuel-resistant substance. I (24.7 g.) and a small crystal of iodine are added to a mixture of 2.4 g. Mg in 50 ml. anhydrous ether, the mixture cooled to 0°, 2.83 ml. SiCl <sub>4</sub> added, the mixture agitated 1 hr. at 0°, refluxed 2.5 hrs., and allowed to cool overnight. The mixture is poured into 100 ml. 6N HCl, and the precipitate obtained separated, dried, and sublimed at 208° at 1 mm. to give 5.5 g. tetrakis(pentafluorophenyl)silane, m. 246-8°, 32% yield.				
NCL	260448200				
CC	39 (Organometallic and Organometalloidal Compounds)				
IT	1524-78-3, Silane, tetrakis(pentafluorophenyl)- (preparation of)				
IT	1524-78-3, Silane, tetrakis(pentafluorophenyl)- (preparation of)				
RN	1524-78-3 HCAPLUS				
CN	Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)				



L60 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1962:475681 HCAPLUS

DN 57:75681

OREF 57:15003a-f

TI Pentafluoroiodobenzene

IN Pummer, Walter J.; Wall, Leo A.

PA U.S. Dept. of the Navy

SO 3 pp.

DT Patent

LA Unavailable

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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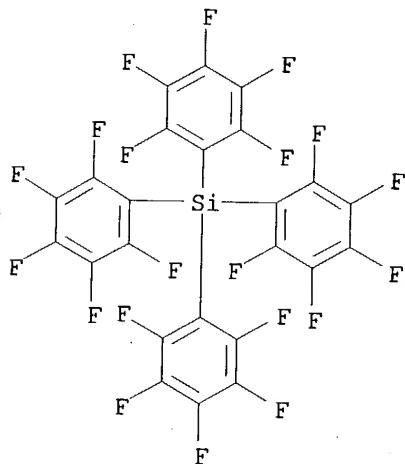
PI US 3046313 19620724 US 19600503

AB Pentafluoroiodobenzene (I), an intermediate in the preparation of perfluorophenyl derivs., was prepared from pentafluorobromobenzene (II) via the Grignard reagent or by iodination of pentafluorobenzene (III). Thus, to a refluxing solution of the Grignard reagent from 10 g. II and 1 g. Mg in 10 ml. Et<sub>2</sub>O was added 9.76 g. F<sub>2</sub>ClC<sub>6</sub>H<sub>4</sub>FI in 5 ml. Et<sub>2</sub>O, the mixture refluxed 3 hrs., let stand overnight, 50 ml. 6N HCl added, the Et<sub>2</sub>O layer separated, dried, and distilled to give 5.78 g. I, b<sub>35</sub> 77-8°, n<sub>20D</sub> 1.4990. In another example the same amount of Grignard-reagent solution was treated at 0° with 12.4 g. F<sub>2</sub>C:CFI, the mixture stirred 1 hr., refluxed 2 hrs., and worked up as before to yield 1 g. I. I was also prepared by adding 255 g. mixture of 45% hexafluorobenzene, 40% III, and 10% tetrafluorobenzene to 200 g. iodine in 1 kg. 65% oleum. The mixture was stirred 4 hrs. at 55-60°, let cool overnight, then in an ice bath, diluted with 2 l. ice H<sub>2</sub>O, decolorized with aqueous NaHSO<sub>3</sub>, and separated. The crude I (177 g.)

was dried and distilled to give 36 g. I. Condensation of II in the presence of Cu powder at 180-90° 48 hrs. then at 290° 6 hrs. gave 87% (C<sub>6</sub>F<sub>5</sub>)<sub>2</sub>, sublimed at 50°/1 mm., m. 67.5-68°. I (5 g.) and 1.6 g. CuCN heated to 150° in 1.34 g. C<sub>5</sub>H<sub>5</sub>N, cooled to 100°, and distilled gave 3.07 g. crude C<sub>6</sub>F<sub>5</sub>CN (IV), b. 18590°, n<sub>23.8D</sub> 1.4764. Hydrolysis of IV with 75% H<sub>2</sub>SO<sub>4</sub> at 180° gave 16% C<sub>6</sub>F<sub>5</sub>CO<sub>2</sub>H, m. 101-3°. To the Grignard reagent from 10 g. II was added 6.6 g. AcH at 0°, the solution stirred 1 hr. at 0°, decomposed with 50 ml. 6N HCl, the Et<sub>2</sub>O layer separated, dried, and distilled to give 81% C<sub>6</sub>F<sub>5</sub>CHMeOH

(V), b37 80-2°, n20D 1.4426. To the Grignard reagent from 24.7 g. II in 50 ml. Et2O was added 4.25 g. SiCl4 at 0°, the mixture stirred 0.5 hr. at 0° refluxed 2.5 hrs., let cool overnight, poured into 100 ml. 6N HCl, and filtered. The solid was sublimed at 208°/1 mm. to give 32% (C6F5)4Si, m. 246-8°. To the Grignard reagent from 30 g. II in 0.75 ml. Et2O was added 5.0 g. PC13 in 20 ml. Et2O in an ice-bath, the mixture let stand at room temperature 15 min., hydrolyzed with 40 ml. cold 10% HCl, the Et2O layer separated, dried, and concentrated Sublimation at 100-30° under reduced pressure gave 39.5% (C6F5)3P (VI), m. 114-15°. Oxidation of 2.0 g. VI by refluxing in 10 g. Na2Cr2O7, 25 ml. H2O, 10 ml. concentrated H2SO4, and 25 ml. AcOH gave, after neutralization and extraction with CHCl3, 2 g. (C6F5)3PO, m. 167-8°. Pyrolysis of 2 g. V over Al2O3 at 345-50° gave, after distillation, 0.6 g. C6F5CH: CH2, b. 140-1°, n20D 1.4414.

CC 29 (Noncondensed Aromatic Compounds)  
 IT Benzene, tetrabromo-  
     (manufacture of)  
 IT 608-71-9, Phenol, pentabromo-  
     (manufacture of)  
 IT 87-82-1, Benzene, hexabromo- 108-72-5, 1,3,5-Benzenetriamine 434-90-2,  
 Biphenyl, decafluoro- 602-94-8, Benzoic acid, pentafluoro- 653-34-9,  
 Styrene, 2,3,4,5,6-pentafluoro- 773-82-0, Benzonitrile, pentafluoro-  
 827-15-6, Benzene, pentafluoriodo- 830-50-2, Benzyl alcohol,  
 2,3,4,5,6-pentafluoro- $\alpha$ -methyl- 1259-35-4, Phosphine,  
 tris(pentafluorophenyl)- 1524-78-3, Silane,  
 tetrakis(pentafluorophenyl)- 2729-11-5, Phosphine oxide,  
 tris(pentafluorophenyl)- 13654-09-6, Biphenyl, decabromo- 27858-07-7,  
 Biphenyl, octabromo- 90823-46-4, Aniline, tetrabromo-  
     (preparation of)  
 IT 1524-78-3, Silane, tetrakis(pentafluorophenyl)-  
     (preparation of)  
 RN 1524-78-3 HCAPLUS  
 CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1961:93280 HCAPLUS  
 DN 55:93280  
 OREF 55:17557a-c

TI Preparation and thermal stability of tetrakis(pentafluorophenyl)silane and tris(pentafluorophenyl)phosphine  
AU Wall, Leo A.; Donadio, Robert E.; Pummer, Walter J.  
CS Natl. Bur. of Standards, Washington, DC  
SO Journal of the American Chemical Society (1960), 82, 4846-4848  
CODEN: JACSAT; ISSN: 0002-7863  
DT Journal  
LA Unavailable  
AB To C<sub>6</sub>F<sub>5</sub>MgBr (from 24.7 g. C<sub>6</sub>F<sub>5</sub>Br, 2.43 g. Mg and 50 ml. dry Et<sub>2</sub>O) was added dropwise 4.25 g. SiCl<sub>4</sub> at 0°, the whole stirred 1 hr. at 0° and refluxed 3 hrs. to give 32% (C<sub>6</sub>F<sub>5</sub>)<sub>4</sub>Si (I), m. 248-50° (sublimation at 208°/1 mm. followed by recrystn. from Me<sub>2</sub>CO-C<sub>6</sub>H<sub>6</sub>), λ 6.57, 7.72, 9.1, 10.26 μ. Attempts to prepare (C<sub>6</sub>F<sub>5</sub>)<sub>2</sub>SiCl<sub>2</sub> by this procedure gave some I and tars. The same procedure gave 39.5% (C<sub>6</sub>F<sub>5</sub>)<sub>3</sub>P (II), m. 116-17°, λ 6.08, 6.57, 6.78, 10.25 μ, λ<sub>MeOHmax</sub>. 253 mμ (ε = 10,400). II (2.0 g.), 10 g. Na<sub>2</sub>CrO<sub>7</sub>, 25 ml. H<sub>2</sub>O, 10 ml. concentrated H<sub>2</sub>SO<sub>4</sub>, and 25 ml. AcOH refluxed 6 hrs. gave 2.0 g. (C<sub>6</sub>F<sub>5</sub>)<sub>3</sub>PO (III), m. 169-70° (petr. ether), λ 6.08, 6.59, 6.75, 8.15, 10.15 μ; λ<sub>MeOHmax</sub>. 2.75, 250 mμ (ε = 2600, 730). The thermal stability of I, II, III, Ph<sub>2</sub> (IV), (C<sub>6</sub>F<sub>5</sub>)<sub>2</sub> (V), Ph<sub>4</sub>Si (VI), and Ph<sub>3</sub>P (VII) at 200-660° indicated the following order: V ≥ IV > VI ≥ I > II > VII > III.  
CC 10E (Organic Chemistry: Benzene Derivatives)  
IT Phosphine, diphenylpiperidino-  
IT 1259-35-4, Phosphine, tris(pentafluorophenyl)- 1524-78-3, Silane, tetrakis(pentafluorophenyl)- 2729-11-5, Phosphine oxide, tris(pentafluorophenyl)- (preparation and thermal stability of)  
IT 35259-94-0, Phosphine sulfide, diphenylpiperidino- (preparation of)  
IT 92-52-4, Biphenyl 434-90-2, Biphenyl, decafluoro- 603-35-0, Phosphine, triphenyl- 1048-08-4, Silane, tetraphenyl- (thermal stability of)  
IT 1524-78-3, Silane, tetrakis(pentafluorophenyl)- (preparation and thermal stability of)  
RN 1524-78-3 HCAPLUS  
CN Silane, tetrakis(pentafluorophenyl)- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)

